UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF PENNSYLVANIA — DESIGNATION FORM to be used by counsel to indicate the category of the case for the purpose of assignment to appropriate calendar.

Address of Plaintiff:___625 Plainfield Road, Suite 322, Willowbrook, IL 60527_____

Address of Defendant:___3999 West Chester Pike, Newtown Square, PA 19073_____

Place of Accident, Incident or Transaction:_____N/A_____

(*Use Reverse Side For Additional Space*)

Does this civil action involve a nongovernmental corporate party with any parent corporation and any publicly held corporation owning 10% or more of its stock?

(Attach two copies of the Disclosure Statement Form in accordance with Fed.R.Civ.P. 7.1(a))   Yes ☒   No ☐

Does this case involve multidistrict litigation possibilities?   Yes ☐   No ☒

RELATED CASE, IF ANY:

Case Number: _____ Judge _____ Date Terminated: _____

Civil cases are deemed related when yes is answered to any of the following questions:

1. Is this case related to property included in an earlier numbered suit pending or within one year previously terminated action in this court?

   Yes ☐   No ☒

2. Does this case involve the same issue of fact or grow out of the same transaction as a prior suit pending or within one year previously terminated action in this court?

   Yes ☐   No ☒

3. Does this case involve the validity or infringement of a patent already in suit or any earlier numbered case pending or within one year previously terminated action in this court?

   Yes ☐   No ☒

4. Is this case a second or successive habeas corpus, social security appeal, or pro se civil rights case filed by the same individual?

   Yes ☐   No ☒

CIVIL: (Place ✔ in ONE CATEGORY ONLY)

A. *Federal Question Cases:*

1. ☐ Indemnity Contract, Marine Contract, and All Other Contracts
2. ☐ FELA
3. ☐ Jones Act-Personal Injury
4. ☐ Antitrust
5. ☒ Patent
6. ☐ Labor-Management Relations
7. ☐ Civil Rights
8. ☐ Habeas Corpus
9. ☐ Securities Act(s) Cases
10. ☐ Social Security Review Cases
11. ☐ All other Federal Question Cases
    (Please specify)

B. *Diversity Jurisdiction Cases:*

1. ☐ Insurance Contract and Other Contracts
2. ☐ Airplane Personal Injury
3. ☐ Assault, Defamation
4. ☐ Marine Personal Injury
5. ☐ Motor Vehicle Personal Injury
6. ☐ Other Personal Injury (Please specify)
7. ☐ Products Liability
8. ☐ Products Liability — Asbestos
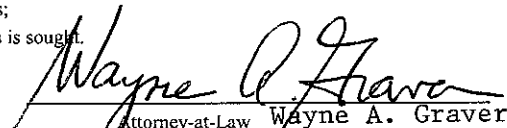9. ☐ All other Diversity Cases
   (Please specify)

ARBITRATION CERTIFICATION
(*Check Appropriate Category*)

I,___Wayne A. Graver_____, counsel of record do hereby certify:

☒ Pursuant to Local Civil Rule 53.2, Section 3(c)(2), that to the best of my knowledge and belief, the damages recoverable in this civil action case exceed the sum of $150,000.00 exclusive of interest and costs;

☒ Relief other than monetary damages is sought.

DATE:___5/11/10_____   *signature* Attorney-at-Law Wayne A. Graver   28245
                                                                            Attorney I.D.#
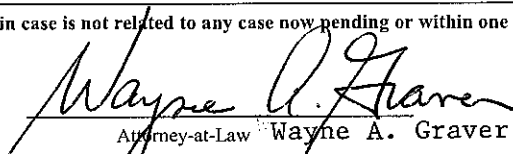
NOTE: A trial de novo will be a trial by jury only if there has been compliance with F.R.C.P. 38.

I certify that, to my knowledge, the within case is not related to any case now pending or within one year previously terminated action in this court except as noted above.

DATE:___5/11/10_____   *signature* Attorney-at-Law Wayne A. Graver   28245
                                                                            Attorney I.D.#

CIV. 609 (6/08)

UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF PENNSYLVANIA — DESIGNATION FORM to be used by counsel to indicate the category of the case for the purpose of assignment to appropriate calendar.

Address of Plaintiff:_____625 Plainfield Road, Suite 322, Willowbrook, IL 60527_____

Address of Defendant:_____3999 West Chester Pike, Newtown Square, PA 19073_____

Place of Accident, Incident or Transaction:_____N/A_____
(Use Reverse Side For Additional Space)

Does this civil action involve a nongovernmental corporate party with any parent corporation and any publicly held corporation owning 10% or more of its stock?

(Attach two copies of the Disclosure Statement Form in accordance with Fed.R.Civ.P. 7.1(a))   Yes☒   No☐

Does this case involve multidistrict litigation possibilities?   Yes☐   No☒

RELATED CASE, IF ANY:

Case Number: _____ Judge _____ Date Terminated: _____

Civil cases are deemed related when yes is answered to any of the following questions:

1. Is this case related to property included in an earlier numbered suit pending or within one year previously terminated action in this court?
       Yes☐   No☒

2. Does this case involve the same issue of fact or grow out of the same transaction as a prior suit pending or within one year previously terminated action in this court?
       Yes☐   No☒

3. Does this case involve the validity or infringement of a patent already in suit or any earlier numbered case pending or within one year previously terminated action in this court?
       Yes☐   No☒

4. Is this case a second or successive habeas corpus, social security appeal, or pro se civil rights case filed by the same individual?
       Yes☐   No☒

CIVIL: (Place ✔ in ONE CATEGORY ONLY)

A. *Federal Question Cases:*
1. ☐ Indemnity Contract, Marine Contract, and All Other Contracts
2. ☐ FELA
3. ☐ Jones Act-Personal Injury
4. ☐ Antitrust
5. ☒ Patent
6. ☐ Labor-Management Relations
7. ☐ Civil Rights
8. ☐ Habeas Corpus
9. ☐ Securities Act(s) Cases
10. ☐ Social Security Review Cases
11. ☐ All other Federal Question Cases
    (Please specify)

B. *Diversity Jurisdiction Cases:*
1. ☐ Insurance Contract and Other Contracts
2. ☐ Airplane Personal Injury
3. ☐ Assault, Defamation
4. ☐ Marine Personal Injury
5. ☐ Motor Vehicle Personal Injury
6. ☐ Other Personal Injury (Please specify)
7. ☐ Products Liability
8. ☐ Products Liability — Asbestos
9. ☐ All other Diversity Cases
    (Please specify)

ARBITRATION CERTIFICATION
(Check Appropriate Category)

I,___Wayne A. Graver_____, counsel of record do hereby certify:

☒ Pursuant to Local Civil Rule 53.2, Section 3(c)(2), that to the best of my knowledge and belief, the damages recoverable in this civil action case exceed the sum of $150,000.00 exclusive of interest and costs;

☒ Relief other than monetary damages is sought.

DATE:___5/11/10_____   Attorney-at-Law   Wayne A. Graver   28245
                                                                              Attorney I.D.#

NOTE: A trial de novo will be a trial by jury only if there has been compliance with F.R.C.P. 38.

I certify that, to my knowledge, the within case is not related to any case now pending or within one year previously terminated action in this court except as noted above.

DATE:___5/11/10_____   Attorney-at-Law   Wayne A. Graver   28245
                                                                              Attorney I.D.#

CIV. 609 (6/08)

APPENDIX G

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF PENNSYLVANIA

CSB-System International Inc.   :
                                     :
                                     :
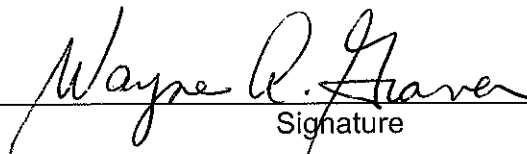   V.   :   Civil Action
                                     :   No: _____
SAP America, Inc.   :
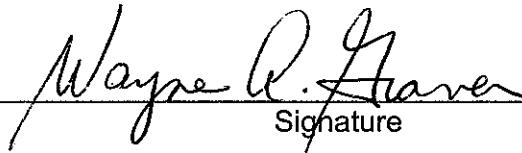
DISCLOSURE STATEMENT FORM

Please check one box:

❑   The nongovernmental corporate party, _____
          , in the above listed civil action does not have any parent corporation and
          publicly held corporation that owns 10% or more of its stock.

☒   The nongovernmental corporate party, CSB-System International Inc.
          , in the above listed civil action has the following parent corporation(s) and
          publicly held corporation(s) that owns 10% or more of its stock:

          ___CSB-System AG, a German corporation_____

          _____

          _____

          _____

___5-11-10_____   _Wayne R. Haver_____
       Date   Signature

                     Counsel for: CSB-System International Inc._____

Federal Rule of Civil Procedure 7.1 Disclosure Statement

    (a)   WHO MUST FILE; CONTENTS. A nongovernmental corporate party must file
            two copies of a disclosure statement that:
            (1)   identifies any parent corporation and any publicly held corporation
                    owning10% or more of its stock; or

            (2)   states that there is no such corporation.

   (b) TIME TO FILE; SUPPLEMENTAL FILING. A party must:
            (1)   file the disclosure statement with its first appearance, pleading,
                    petition, motion, response, or other request addressed to the court;
                    and
            (2)   promptly file a supplemental statement if any required information
                    changes.

APPENDIX G

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF PENNSYLVANIA

CSB-System International Inc.   :
                                       :
              V.   :   Civil Action
                                       :   No: _____
SAP America, Inc.   :

DISCLOSURE STATEMENT FORM

Please check one box:

❏   The nongovernmental corporate party, _____
           , in the above listed civil action does not have any parent corporation and
           publicly held corporation that owns 10% or more of its stock.

☒   The nongovernmental corporate party, _CSB-System International Inc._
           , in the above listed civil action has the following parent corporation(s) and
           publicly held corporation(s) that owns 10% or more of its stock:

           ___CSB-System AG, a German corporation_____

           _____

           _____

           _____

_5-11-10_____   _Wayne R. Haver_____
    Date   Signature

                    Counsel for: _CSB-System International Inc._____

Federal Rule of Civil Procedure 7.1 Disclosure Statement

(a)   WHO MUST FILE; CONTENTS. A nongovernmental corporate party must file
        two copies of a disclosure statement that:
        (1)   identifies any parent corporation and any publicly held corporation
                owning10% or more of its stock; or

        (2)   states that there is no such corporation.

(b) TIME TO FILE; SUPPLEMENTAL FILING. A party must:
        (1)   file the disclosure statement with its first appearance, pleading,
                petition, motion, response, or other request addressed to the court;
                and
        (2)   promptly file a supplemental statement if any required information
                changes.

The JS-44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose if initiating the civil docket sheet. (SEE INSTRUCTIONS ON THE REVERSE OF THE FORM.)

I (a) PLAINTIFFS	DEFENDANTS
CSB-System International Inc. 625 Plainfield Road, Suite 322 Willowbrook, IL 60527	SAP AMERICA, INC. 3999 West Chester Pike Newtown Square, PA 19073

(b) COUNTY OF RESIDENCE OF FIRST LISTED PLAINTIFF: **DuPage**
(EXCEPT IN U.S. PLAINTIFF CASES)

COUNTY OF RESIDENTCE OF FIRST LISTED DEFENDANT: **Delaware**
(IN U.S. PLAINTIFF CASES ONLY)
NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE TRACT OF LAND INVOLVED

(c) ATTORNEYS (FIRM NAME, ADDRESS, AND TELEPHONE NUMBER)
Wayne A. Graver, Esq.
Lavin, O'Neil, Ricci, Cedrone & DiSipio
190 N. Independence Mall West
Philadelphia, PA 19106

ATTORNEYS (IF KNOWN)

II. BASIS OF JURISDICTION (PLACE AN "X" IN ONE BOX ONLY)

☐ 1 U.S. Government Plaintiff

☒ 3 Federal Question
(U.S. Government Not a Party)

☐ 2 U.S. Government Defendant

☐ 4 Diversity
(Indicate Citizenship of Parties in Item III)

III. CITIZENSHIP OF PRINCIPAL PARTIES (PLACE AN "X" IN ONE BOX FOR PLAINTIFF AND ONE FOR DEFENDANT)
(For Diversity Cases Only)

	PTF	DEF		PTF	DEF
Citizen of This State	☐ 1	☐ 1	Incorporated *or* Principal Place of Business in This State	☐ 4	☐ 4
Citizen of Another State	☐ 2	☐ 2	Incorporated *and* Principal Place of Business in Another State	☐ 5	☐ 5
Citizen or Subject of a Foreign Country	☐ 3	☐ 3	Foreign Nation	☐ 6	☐ 6

IV. NATURE OF SUIT   (PLACE AN x IN ONE BOX ONLY)

CONTRACT	TORTS		FORFEITURE/PENALTY	BANKRUPTCY	OTHER STATUTES
☐ 110 Insurance ☐ 120 Marine ☐ 130 Miller Act ☐ 140 Negotiable Instrument ☐ 150 Recovery of Overpayment & Enforcement of Judgment ☐ 151 Medicare Act ☐ 152 Recovery of Defaulted Student Loans (Excl. Veterans) ☐ 153 Recovery of Overpayment of Veteran's Benefits ☐ 160 Stockholders Suits ☐ 190 Other Contract ☐ 195 Contract Product Liability	**PERSONAL INJURY** ☐ 310 Airplane ☐ 315 Airplane Product Liability ☐ 320 Assault, Libel & Slander ☐ 330 Federal Employers' Liability ☐ 340 Marine ☐ 345 Marine Product Liability ☐ 350 Motor Vehicle ☐ 355 Motor Vehicle Product Liability ☐ 360 Other Personal Injury	**PERSONAL INJURY** ☐ 362 Personal Injury – Med Malpractice ☐ 365 Personal Injury – Product Liability ☐ 368 Asbestos Personal Injury Product Liability **PERSONAL PROPERTY** ☐ 370 Other Fraud ☐ 371 Truth in Lending ☐ 380 Other Personal Property Damage ☐ 385 Property Damage Product Liability	☐ 610 Agriculture ☐ 620 Other Food & Drug ☐ 625 Drug Related Seizure of Property 21 USC 881 ☐ 630 Liquor Laws ☐ 640 R.R. & Truck ☐ 650 Airline Regs ☐ 660 Occupational Safety/Health ☐ 690 Other	☐ 442 Appeal 28 USC 158 ☐ 423 Withdrawl 28 USC 157 **PROPERTY RIGHTS** ☐ 820 Copyrights ☒ 830 Patent ☐ 840 Trademark	☐ 400 State Reapportionment ☐ 410 Antitrust ☐ 430 Banks and Banking ☐ 450 Commerce/ICC Rates/etc. ☐ 460 Deportation ☐ 470 Racketeer Influenced and Corrupt Organizations ☐ 810 Selective Service ☐ 850 Securities/Commodities Exchange ☐ 875 Customer Challenge 12 USC 3410
			LABOR	**SOCIAL SECURITY**	☐ 891 Agricultural Arts
REAL PROPERTY	**CIVIL RIGHTS**	**PRISONER PETITIONS**	☐ 710 Fair Labor Standards Act ☐ 720 Labor/Mgmt. Relations ☐ 730 Labor/Mgmt. Reporting & Disclosure Act ☐ 740 Railway Labor Act ☐ 790 Other Labor Litigation ☐ 791 Empl. Ret. Inc. Security Act	☐ 861 HIA (139ff) ☐ 862 Black Lung (923) ☐ 863 DIWC/DIWW (405(g)) ☐ 864 SSID Tile XVI ☐ 865 RSI (405(g)) **FEDERAL TAX SUITS** ☐ 870 Taxes (U.S. Plaintiff or Defendant) ☐ 871 IRS – Third Party 26 USC 7609	☐ 892 Economic Stabilization Act ☐ 893 Environmental Matters ☐ 894 Energy Allocation Act ☐ 895 Freedom of Information Act ☐ 900 Appeal of Fee Determination Under Equal Access to Justice ☐ 950 Constitutionality of State Statutes ☐ 890 Other Statutory Actions
☐ 210 Land Condemnation ☐ 220 Foreclosure ☐ 230 Rent Lease & Ejectment ☐ 240 Torts to Land ☐ 245 Tort Product Liability ☐ 290 All Other Real Property	☐ 441 Voting ☐ 442 Employment ☐ 443 Housing/ Accommodations ☐ 444 Welfare ☐ 440 Other Civil Rights	☐ 510 Motions to Vacate Sentence Habeas Corpus: ☐ 520 General ☐ 535 Death Penalty ☐ 540 Mandamus & Other ☐ 550 Other			

V. ORIGIN   (PLACE AN x IN ONE BOX ONLY)

☒ 1 Original Proceeding
☐ 2 Removed from State Court
☐ 3 Remanded from Appellate Court
☐ 4 Reinstated or Reopened
☐ 5 Transferred from another district (specify)
☐ 6 Multidistrict Litigation
☐ 7 Appeal to District Judge from Magistrate Judgment

VI. CAUSE OF ACTION (CITE THE U.S. CIVIL STATUTE UNDER WHICH YOU ARE FILING AND WRITE A BRIEF STATEMENT OF CAUSE. DO NOT CITE JURISDICTIONAL STATUTES UNLESS DIVERSITY) 35 U.S.C. §1 et seq. – Patent infringement action

VII. REQUESTED IN COMPLAINT: CHECK IF THIS IS A CLASS ACTION ☐ UNDER F.R.C.P. 23   DEMAND $ Check YES only if demanded in complaint: JURY DEMAND ☒ YES ☐ NO
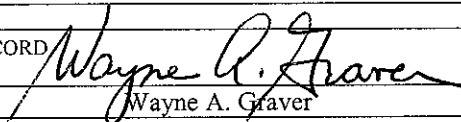
VIII. RELATED CASE(S) IF ANY (See instructions): N/A   JUDGE   DOCKET NUMBER

DATE 5/11/10   SIGNATURE OF ATTORNEY OF RECORD *Wayne A. Graver*
Wayne A. Graver

FOR OFFICE USE ONLY
RECEIPT # _____ AMOUNT _____ APPLYING IFP _____ JUDGE _____ MAG. JUDGE _____

<div align="center">

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

</div>

CSB-SYSTEM INTERNATIONAL INC.)
625 Plainfield Road, Suite 322)
Willowbrook, IL 60527)
)
)
c/o The Corporation Trust Co.)
Corporation Trust Center)
1209 Orange Street)
Wilmington, DE 19801)
)
)
        Plaintiff,)
)
)
v.)
)
)
SAP AMERICA, INC.)
3999 West Chester Pike)
Newtown Square, PA 19073)
)
)
        Defendant.)
_____)
	CIVIL ACTION NO. _____
	
	JURY TRIAL DEMANDED

<div align="center">

COMPLAINT

</div>

CSB-System International Inc. ("CSB") brings this Complaint for patent infringement against SAP America, Inc. ("SAP"), and alleges as follows:

<div align="center">

NATURE OF THE ACTION

</div>

1.   This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. § 1 et seq., and seeking damages and injunctive relief under 35 U.S.C. §§ 271, 281, 283-285.

<div align="center">

THE PARTIES

</div>

2.   Plaintiff CSB-System International Inc. is a corporation organized and existing under the laws of the State of California.

3.   Upon information and belief, Defendant SAP America, Inc. is a corporation organized and existing under the laws of the State of Delaware with its principal place of business located at 3999 West Chester Pike, Newtown Square, Pennsylvania 19703.

JURISDICTION AND VENUE

4.   This Court has subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a).

5.   This Court has personal jurisdiction over SAP because SAP is licensed to do business in the State of Pennsylvania and continuously, systematically, and purposefully conducts business within this District. Upon information and belief, SAP sells and offers for sale in Pennsylvania, Electronic Data Processing and Customer Resource Management systems that are integrated with telephone installations and connected with telephone networks.

6.   Venue is proper in this judicial district based on 28 U.S.C. § 1400(b) and/or 28 U.S.C. § 1391(b) and (c).

FACTUAL ALLEGATIONS

7.   CSB provides industry specific Enterprise Resource Planning ("ERP") software, Electronic Data Processing ("EDP") software, and Customer Resource Management ("CRM") software, as well as related hardware and consulting services.

8.   On May 20, 1997, the United States Patent & Trademark Office issued U.S. Patent No. 5,631,953 ("the '953 patent"), entitled Circuit Arrangement for the Integration of EDP Systems in Telephone Systems. A true copy of the '953 patent is attached as Exhibit A.

9.   CSB is the assignee of all right, title, and interest in and to the '953 patent and possesses all rights of recovery under the '953 patent, including the right to sue for infringement and recourse for damages.

2

10.   SAP competes against CSB for the sale of such EDP, ERP, and CRM systems.

11.   At least two versions of SAP's products, the SAPphone module and the SAP Integrated Communication Interface ("ICI"), infringe the '953 patent and, on information and belief, these infringing products have been sold or offered for sale in the United States.

12.   CSB has never authorized SAP to manufacture, sell, offer for sale, or use products falling within the scope of the '953 patent.

13.   CSB has never authorized SAP to manufacture, sell, offer for sale, or use any EDP system falling within the scope of the '953 patent.

14.   Each claim of the '953 patent is presumed to be valid and invalidity must be proven by clear and convincing evidence.

Count I
(Patent Infringement)

15.   CSB repeats the allegations in paragraphs 1-14.

16.   The ongoing manufacture, importation, use, sale and/or offer for sale by SAP of the SAPphone module and the SAP Integrated Communication Interface infringes, either literally or under the doctrine of equivalents, at least claim 1 of the '953 patent, or contributes to or induces such infringement.

17.   Upon information and belief, SAP's actions have been and are with knowledge of the '953 patent and thus have been and are in willful disregard of those patent rights.

18.   As a direct and proximate consequence of SAP's actions, CSB has suffered monetary damages in an amount to be determined at trial.

19.   As a direct and proximate consequence of SAP's actions, CSB will continue to suffer irreparable injury unless and until SAP is enjoined from infringing the '953 patent.

3

PRAYER FOR RELIEF

WHEREFORE, CSB respectfully requests all legal and equitable relief as may be recoverable for the foregoing offenses, including:

(a)   a judgment that SAP infringes one or more claims of the '953 patent;

(b)   a permanent injunction enjoining SAP, its officers, agents, servants, employees, successors, subsidiaries, and all persons acting under, in concert with, or for it, from directly or indirectly making or causing to be made, using or causing to be used, selling or causing to be sold, offering for sale or causing to be offered for sale, or importing or causing to be imported products that fall within the scope of one or more claims of the '953 patent, or otherwise directly or contributorily infringing, or inducing infringement of, the '953 patent;

(c)   an order requiring SAP, its officers, agents, servants and employees to recall and destroy all products infringing, directly or otherwise, one or more claims of the '953 patent;

(d)   an order directing SAP to file with this Court and serve on CSB within twenty (20) days after service of an injunction a written report setting forth in detail the manner and form in which SAP has complied with each injunction to which the Court finds CSB is entitled;

(e)   an award of damages adequate to compensate CSB for the infringement of the '953 patent, together with prejudgment and post-judgment interest thereon at the highest rate allowable at law until paid in full, and costs fixed by the Court, as provided by 35 U.S.C. § 284;

4

(f)   a judgment that the infringement of the '953 patent was and is willful, and an

        award to CSB of treble damages in accordance with 35 U.S.C. § 284;

(g)   a declaration that this is an exceptional case and that CSB be granted its

        reasonable attorneys fees pursuant to 35 U.S.C. § 285; and

(h)   a grant to CSB of such further relief as this Court deems just and proper.

JURY DEMAND

Pursuant to Federal Rule of Civil Procedure 38, CSB demands a trial by jury on all issues

so triable.

Respectfully submitted,

BY: _____
        Wayne A. Graver, Esquire (ID No. 28245)
        LAVIN, O'NEIL, RICCI, CEDRONE &
        DISIPIO
        190 N. Independence Mall West
        Philadelphia, PA 19106
        Counsel for Plaintiff
        CSB-System International Inc.
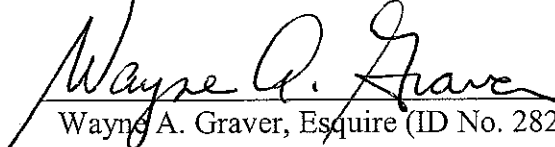
Dated: May 11, 2010

5

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of plaintiff's Complaint was forwarded to

defendant identified below, via Federal Express (overnight mail), on May 11, 2010:

> **SAP AMERICA**
> **3999 WEST CHESTER PIKE**
> **NEWTOWN SQUARE, PA 19073**

> **LAVIN, O'NEIL, RICCI, CEDRONE & DISIPIO**
>
> BY: _/Wayne A. Graver_
>   Wayne A. Graver, Esquire (ID No. 28245)
>   **LAVIN, O'NEIL, RICCI, CEDRONE &**
>   **DISIPIO**
>   190 N. Independence Mall West
>   Philadelphia, PA 19106
>   Counsel for Plaintiff
>   CSB-System International Inc.

Dated: May 11, 2010

6

EXHIBIT "A"

US005631953A

United States Patent [19]

Thomas et al.

[11] **Patent Number:** **5,631,953**

[45] **Date of Patent:** **May 20, 1997**

[54] **CIRCUIT ARRANGEMENT FOR INTEGRATION OF EDP SYSTEMS IN THE UTILIZATION OF TELEPHONE SYSTEMS**

[75] Inventors: **Gottfried Thomas**, Hückelhoven; **Ulrich Mergemann**, Pulheim, both of Germany

[73] Assignee: **CSB-System Software -Entwicklung & Unternehmungsberatung GmbH,** Geilenkirchen, Germany

[21] Appl. No.: **522,313**

[22] PCT Filed: **Feb. 26, 1994**

[86] PCT No.: **PCT/DE94/00229**

§ 371 Date: **Aug. 25, 1995**

§ 102(e) Date: **Aug. 25, 1995**

[87] PCT Pub. No.: **WO94/21091**

PCT Pub. Date: **Sep. 15, 1994**

[30]   **Foreign Application Priority Data**

Mar. 5, 1993 [DE] Germany .... 9303214 U

[51] **Int. Cl.**^{6} **H04M 11/00**
[52] **U.S. Cl.** **379/94;** 370/385; 379/399
[58] **Field of Search** 379/94, 93, 96–100, 379/242, 387, 399; 370/110.1, 85.13; 375/216; 348/14–16

[56]   **References Cited**

U.S. PATENT DOCUMENTS

5,448,286 9/1995 Decaesteke et al. 379/94

5,453,984 9/1995 Mueller 370/110.1
5,461,620 10/1995 Bergler 370/110.1

Primary Examiner—Wing F. Chan
Attorney, Agent, or Firm—Michael J. Striker

[57]   **ABSTRACT**

The invention relates to a circuit arrangement for the integration of EDP systems in the use of telephone installations which are connected to the public ISDN or Euro ISDN telephone systems. The aim is to connect a telephone installations to an EDP installation in such a way that all the functions of the EDP system can be used during the use of the telephone installation. This aim is achieved by using a circuit arrangement consisting of: the telephone sets (2;11;13) which are directly connected to the public ISDN or Euro ISDN telephone system (1) via a line (a) and an intelligent telephone installation (3); and an integration component (5) which is arranged between the intelligent telephone installation (3) and the personal computers (4; 12; 14), on the one hand receives signals via the SDLC or ISDN connector (8) by means of line (b) from the public ISDN or Euro ISDN telephone system (1) through the intelligent telephone installation (3) and send signals back to the public ISDN or Euro ISDN telephone system (1), and on the other hand transmits a set of data having suitable information via line (c), an LAN (9) which is connected via line (d) to the LAN server (10) and line (c) to the personal computers (4; 12; 14) and receives the set of data back from the personal computers (4; 12; 14). The conversion of the signals into the set of data and vice versa is performed by the integration component (5) via a computing system (6), a software layer (7) and an SDLC or ISDN connector (8) with internal software.

8 Claims, 1 Drawing Sheet
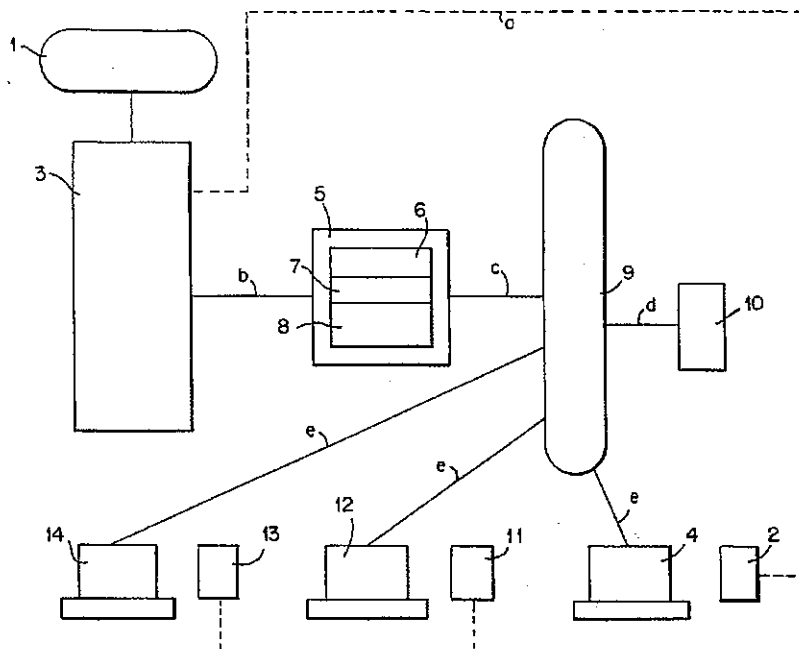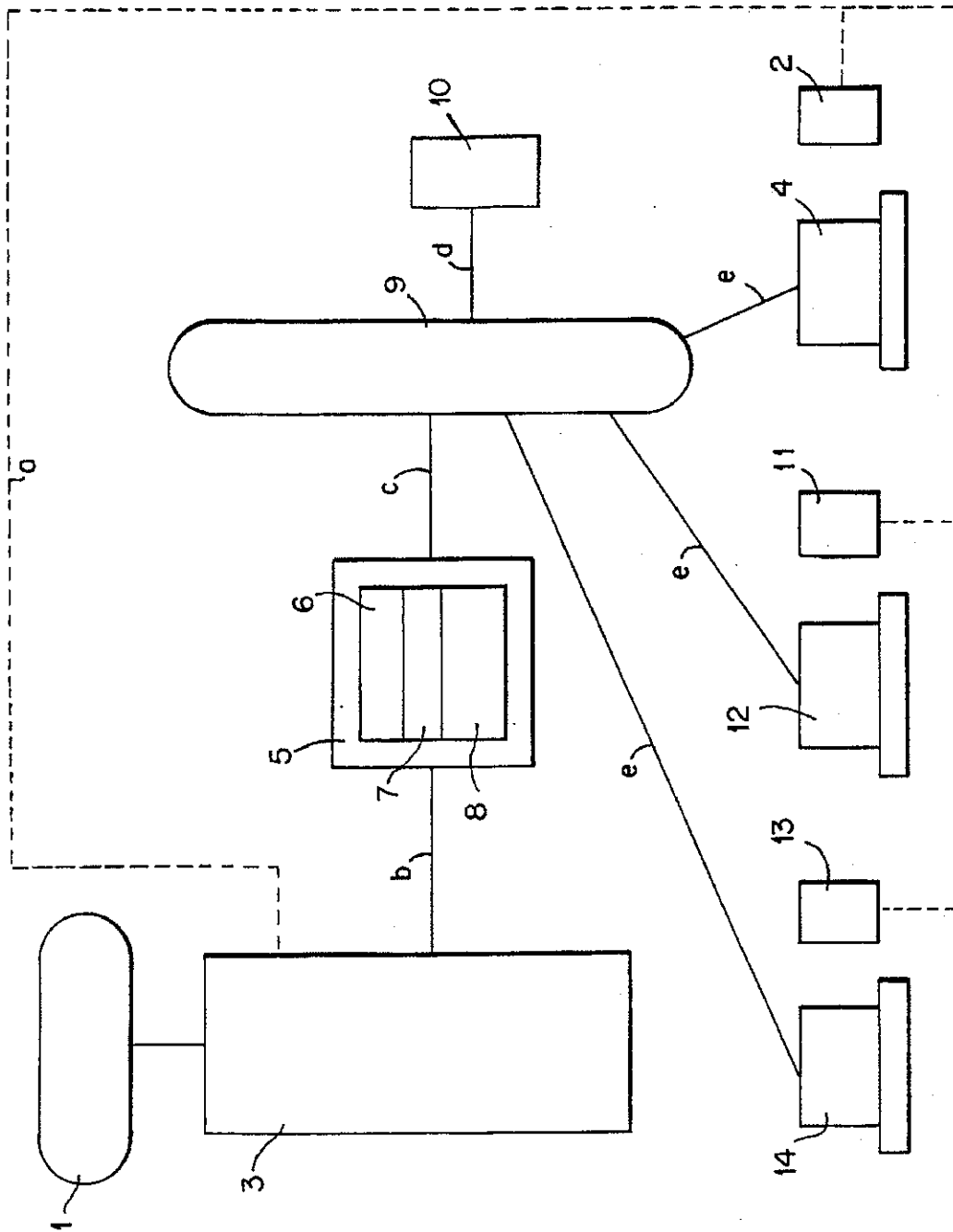
U.S. Patent   May 20, 1997   5,631,953

FIG.1

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CIRCUIT ARRANGEMENT FOR INTEGRATION OF EDP SYSTEMS IN THE UTILIZATION OF TELEPHONE SYSTEMS

BACKGROUND OF THE INVENTION

The invention concerns a circuit arrangement for the integration of EDP systems in the utilization of telephone systems connected to the public telephone network ISDN or Euro ISDN.

With the development of data acquisition, processing, evaluation and last but not least its application, the necessary communication requirements increased. There is now an urgent need to find economical solutions which incorporate new ways of integrating speech and data communications systems.

Until today only partial and isolated solutions could be produced satisfactorily for PC-TC links. Present speech and data communications systems are characterized mainly by manual activities and voice communication which are time-consuming and subject to a high loss rate. It is therefore common practice today for speech and data communications to take place in such a way that the caller determines the competent party by telephone, that they then exchange data and information necessary for mutual identification and which form the basis for the subsequently desired voice and data communications of the caller.

The competent party for the call acquires the data and information desired by the caller from his computer or stores additional data and information of the caller in it. If other data and information is then required which the competent party does not have at his disposal, the responsible person must be included as a further competent party in this speech and data communication in the same way as described above. The disadvantage of this speech and data communication is that it is too time-consuming, that incomplete and false information may be transferred due to the speech communication and manual operation of the computer. In addition no data-controlled connection setup is possible with the switching functions

connect

transcouple

release

activation of refer-back

logon

the monitoring system

inquiry of the connection status

disconnect

transfer

brokerage

initiation of multiparty conference

determination of the party status

the control function for the features

parallel or simultaneous fax transmissions and data transfer
    with ongoing speech and data communication

A telephone data service with respect to the control of digital telephone extensions with data entry via a telecommunications and information system and identification of the caller via ISDN or Euro ISDN in the present 1TR6 protocol or the future EDSS1 protocol cannot be protected. Other disadvantages are that data and information which may be available in part in large volumes cannot be transferred mutually in this speech and data communication. This is done subsequently by mailing or by fax. This means even more time is lost and a delay in urgent decision making. Furthermore solutions are known which allow a partly

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rational speech and data communication by using (special) high-performance telephone extensions. Every telephone extension is connected to only one computer by an expensive circuit card which operates with a specially developed software. Such a solution brings further disadvantages in addition to the high costs. The disadvantages are the impossibility of setting up multiparty conferences especially for data transmission. A direct data transfer from the competent party to the caller and vice versa and the control of digital telephone extensions with data entry via a telecommunications and information system and the identification of the caller by ISDN or Euro ISDN in the present 1TR6 protocol or the future EDSS1 protocol is only possible with a telephone extension and the respective connected computer.

According to DE-OS 4101885 a telecommunications system, a telephone system to be precise, is known which possesses a switching system with terminals and which is connected to a computer for simplified or additional handling of computer-aided communication services. It is distinguished by the fact that the computer is an integral part of the telecommunications system and has an interface which is available not for telecommunications services but for external computer services. This solution also has disadvantages in that all functions of a TC system cannot be used and operated by every computer in the network so that not every type of communication can be generated by all computers in the network (speech and data communication and image transfer).

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a circuit arrangement for integration of EDP systems in the utilization of telephone systems, which avoids the disadvantages of the prior art.

In keeping with these objects and with others which will become apparent hereinafter, one feature of the present invention resides, briefly stated, in a circuit arrangement for integration of EDP systems in utilization of telephone systems connected to a public ISDN or Euro ISDN telephone network, the circuit arrangement comprising a plurality of telephone extensions which are directly connectable to a telephone network selected from the group consisting of a public ISDN telephone network and Euro ISDN telephone network, a first line, an intelligent telephone system arranged so that the telephone extensions are connectable with the at least one telephone network through the first line and the intelligent telephone system, a plurality of personal computers, an integration element arranged between the intelligent telephone system and the personal computers, the integration element receiving signals via at least one connection element selected from the group consisting of an SDLC connection element and an ISDN connection element via a second line from the at least one telephone network via the intelligent telephone system and sending back signals to the at least one telephone network, the integration element also sending a data record assigned an appropriate information via a third line, via a LAN connected to a LAN server by a fourth line and via a fifth line to the personal computers and receiving a data record from the personal computers again, a computing system, and a software layer arranged so that a conversion of the signals into a data record and vice versa is carried by the integration element, by the computing system, by the software layer and by the at least one connection element with an internal software.

It is another feature of the present invention that the personal computers are provided with keyboards so that a speech or data communication between a caller via the at

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least one telephone network and a competent party on one of the telephone extensions with a respectively assigned one of the personal computers is sent to another competent party and back after the respective competent party has sent a data record assigned the appropriate information to the integration element by operating the keyboard of the respectively assigned one of the personal computers, and a necessary signal leaving the integration element is applied at the intelligent telephone system and a connection to at least one another or every telephone extension is established, so that a connection to every telephone extension simultaneously provides an immediate integration of the personal computer assigned to the telephone extension in the established speech and data communication.

It is also a feature of the present invention that the integration element is formed so that it is possible to hold an applied speech and data communication in conference where required together with at least one further competent party or all parties of the telephone extensions.

It is an additional feature of the present invention that the integration element is formed so that data are transferable when a speech and data communication has been established by every competent part even during a conference and by all competent parties both to and from a caller to every participating competent party and between the competent parties with and without a caller.

It is a further feature of the present invention that the integration element is formed so that in addition to the speech and data communication, a fax transmission is made simultaneously or parallel between the respective competent party and the caller using the keyboard of a respective one of the personal computers by using the connection of the respective personal computer with the at least one telephone network via the fixed line with the LAN with inclusion of the LAN server via the fourth line, via the third line with the integration element comprising the computing system, the software, the at least one connection element with the internal software, and via the second line with the intelligent telephone system.

The advantages of the invention are that a telephone system can be linked to an EDP system in such a way that all functions of the EDP system can be used during utilization of the telephone system.

It guarantees a data-controlled connection setup with the switching functions
connect
transcouple
release
activation of refer-back
disconnect
transfer
brokerage
initiation of multiparty conference
logon
the monitoring system
inquiry of the connection status
determination of the party status
the control function for the features
parallel or simultaneous fax transmissions and data transfer with ongoing speech and data communication

Other advantages of the invention are the control of digital telephone extensions with data entry via a telecommunications and information system and identification of the caller by ISDN or Euro ISDN in the present 1TR6 protocol or the future EDSS1 protocol. If the LAN should fail, the speech communication can be maintained. Simple telephone extensions without multi-functions are required to operate this speech and data communication system.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a view schematically showing a circuit arrangement for integration of EDP systems in the utilization of telephone systems, in accordance with the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In order to satisfy the increasing communications requirements, it is necessary to design speech and data communications systems more economically and here the most acute need is for an integration system.

The circuit arrangement for the integration of EDP systems in the utilization of telephone systems illustrated in FIG. 1 is shown by way of explanation on an intelligent telephone system which is connected to the public ISDN or Euro ISDN telephone network externally and internally both via the LAN with three personal computers and with three telephone extensions. However, it should be emphasized that this circuit arrangement can also be used for analog telephone systems with a specially developed software.

When a caller dials a competent party of telephone extension 2 through the public ISDN or Euro ISDN telephone network and the connection is established, the connection is made directly through an intelligent telephone system 3 and a line a to telephone extension 2. At the same time the personal computer 4 assigned to telephone extension 2 establishes a connection with the intelligent telephone system 3 via a line b, an integration element 5 comprising a computing system 6, a software 7 and an SDLC or ISDN connection element 8 with an internal software, a line c, a LAN 9 including the LAN server 10 by means of line d and a line e. With this connection every dialling function is established, the incoming call is identified and all the necessary data are displayed on the personal computer 4. This is realized by the integration element 5 in such a way that when a call is connected to telephone extension 2 a signal is immediately sent on line b by the intelligent telephone system 3 to the integration element 5, which, assigned the appropriate information in a data record by the integration element 5, is passed via the LAN 9 to the associated personal computer 4. Here it is possible to pass the caller data and information directly from the LAN server 10 and its database at the same time as the call arrives. If the party dialled by the caller with telephone extension 2 is not the competent party then the caller can call the competent party, e.g. extension 11 by operating the keyboard of his personal computer 4 and by switching a data record via line e, the LAN 9 via line c to the integration element 5 by the signal generated by the integration element 5, via line b to the intelligent telephone system 3 and from there via the line a. Here too, all the necessary data are displayed immediately after the connection has been made on his personal computer 12, released by signals of the intelligent telephone system 3 which is converted into a data record in the integration element 5 and was sent via LAN 9 with inclusion of the

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database of the LAN server **10** and the associated lines c; d; e to the personal computer **12** and the necessary communication can take place immediately. If the called or switched competent party, e.g. at extension **11**, requires the inclusion of another competent party or several competent parties to clarify questions and data of the caller, he can include these competent parties in a conference by operating the keyboard of his own personal computer **12** and by transferring a data record in the same way as described above via the intelligent telephone system **3** by establishing the connection so that all telephone extensions **2**; **11**; **13**; and personal computers **4**; **12**; **14** are connected. Whereby all those participating in the conference can transfer data and information to the caller and from the caller to all other participants in the conference. Exchange of data between the competent parties is also possible irrespective of whether a caller is included in the speech and data communication or not.

Parallel to the above mentioned voice and data communication it is possible for every competent party to send the caller a fax.

This simultaneous and parallel fax transmissions next to the ongoing speech and data communication via the connection of the respective personal computer **4**, **12** or **14** is made simultaneously via the line e with the LAN **9** with inclusion of the LAN server **10** via the line d, via the line c with the integration element **5** comprising the computing system **6**, the software **7** and the SDLC or ISDN connection element **8** with an internal software and via the line b with the intelligent telephone system **3** to the public ISDN or Euro ISDN telephone network and thus to the caller by operating the keyboard of the personal computer **4**; **12** or **14**.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of constructions differing from the types described above.

While the invention has been illustrated and described as embodied in a circuit arrangement for integration of EDP systems in the utilization of telephone systems, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention.

What is claimed as new and desired to be protected by Letters Patent is set forth in the appended claims.

We claim:

1. A circuit arrangement for integration of EDP systems in utilization of telephone systems connected to a public ISDN or Euro ISDN telephone network, the circuit arrangement comprising a plurality of telephone extensions which are directly connectable to a telephone network selected from the group consisting of a public ISDN telephone network and Euro ISDN telephone network; a first line; an intelligent telephone system arranged so that said telephone extensions are connectable with said at least one telephone network through said first line and said intelligent telephone system; a plurality of personal computers; an integration element arranged between said intelligent telephone system and said personal computers, said integration element receiving signals via at least one connection element selected from the group consisting of an SDLC connection element and an ISDN connection element via a second line from said at least

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one telephone network via said intelligent telephone system and sending back signals to said at least one telephone network, said integration element also sending a data record assigned an appropriate information via a third line, via a LAN connected to a LAN server by a fourth line and via a fifth line to said personal computers and receiving a data record from said personal computers again; a computing system; and a software layer arranged so that a conversion of the signals into a data record and vice versa is carried by said integration element, by said computing system, by said software layer and by said at least one connection element with an internal software.

2. A circuit arrangement as defined in claim 1, wherein said personal computers are provided with keyboards so that a speech or data communication between a caller via said at least one telephone network and a competent party on one of said telephone extensions with a respectively assigned one of said personal computers is sent to another competent party and back after the respective competent party has sent a data record assigned the appropriate information to said integration element by operating said keyboard of the respectively assigned one of said personal computers, and a necessary signal leaving said integration element is applied at said intelligent telephone system and a connection to at least one another telephone extension is established, so that a connection to every telephone extension simultaneously provides an immediate integration of said personal computer assigned to said telephone extension in the established speech and data communication.

3. A circuit arrangement as defined in claim 1, wherein said personal computers are provided with keyboards so that a speech or data communication between a caller via said at least one telephone network and a competent party on one of said telephone extensions with a respectively assigned one of said personal computers is sent to another competent party and back after the respective competent party has sent a data record assigned the appropriate information to said integration element by operating said keyboard of the respectively assigned one of said personal computers, and a necessary signal leaving said integration element is applied at said intelligent telephone system and a connection to all said telephone extensions is established, so that a connection to every telephone extension simultaneously provides an immediate integration of said personal computer assigned to said telephone extension in the established speech and data communication.

4. A circuit arrangement as defined in claim 2, wherein said integration element is formed so that it is possible to hold an applied speech and data communication in conference where required together with at least one further competent party.

5. A circuit arrangement as defined in claim 2, wherein said integration element is formed so that it is possible to hold the speech and data communication in conference with all parties of said telephone extensions.

6. A circuit arrangement as defined in claim 1, wherein said integration element is formed so that data are transferable when a speech and data communication has been established by every competent part even during a conference and by all competent parties both to and from a caller to every participating competent party and between the competent parties with and without a caller.

7. A circuit arrangement as defined in claim 1, wherein said integration element is formed so that in addition to the speech and data communication, a fax transmission is made simultaneously between the respective competent party and the caller using the keyboard of a respective one of said

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personal computers by using the connection of the respective personal computer with said at least one telephone network via said fixed line with the LAN with inclusion of the LAN server via said fourth line, via said third line with the integration element comprising said computing system, said software, said at least one connection element with the internal software, and via said second line with the intelligent telephone system.

8. A circuit arrangement as defined in claim 1, wherein said integration element is formed so that in addition to the speech and data communication, a fax transmission is made parallel between the respective competent party and the

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caller using the keyboard of a respective one of said personal computers by using the connection of the respective personal computer with said at least one telephone network via said fixed line with the LAN with inclusion of the LAN server via said fourth line, via said third line with the integration element comprising said computing system, said software, said at least one connection element with the internal software, and via said second line with the intelligent telephone system.

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